

The Collectivist Legacy and Agrarian Development in China since 1978

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journals.sagepub.com/home/mcx**Burak Gürel¹****Abstract**

This article contributes to the study of the collectivist legacy in Chinese agriculture after 1978 by making five main arguments. First, it demonstrates that the construction of a robust agricultural infrastructure in the collective era enabled the government of the reform era to reduce its infrastructural spending without harming agricultural productivity in the 1980s. Second, village administrations were heavily involved in farm organization in the same period. Third, the collective-era legacy of labor mobilization was relatively strong until the early 2000s. Fourth, the degree of local self-financing remained significant until the abolition of the agricultural tax in 2006. Finally, although the “one project, one discussion” 一事一议 reform of 2008 has failed to raise a significant amount of labor and funds from villagers on a voluntary basis, it nevertheless shows that collective mobilization of labor and financial resources has not been entirely forgotten and continues to inform Chinese agrarian policy to a certain extent.

Keywords

China, agriculture, agricultural tax, rural collectives, decollectivization, labor mobilization

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The performance of Chinese agriculture improved significantly after the transition from collective farming to household farming. The average annual growth rate of agricultural output increased from 3.01 percent between 1970 and 1979 to 5.31 percent between 1980 and 1989 and 5.43 percent between 1990 and 2002. The average annual growth rate of labor productivity improved at an even more impressive rate, jumping from a mere 0.17 percent between 1970 and 1979 to 4.09 percent between 1980 and 1989 and 3.79 percent between 1990 and 2000 (Fan and Chan-Kang, 2005: 139). The dominant approach in the literature in both China and the West—which I refer to as the “decollectivization thesis” in the remainder of this article—suggests that decollectivization of Chinese agriculture was the main reason behind improved productivity after 1978. According to this approach, by violating the principle of privately organized and market-oriented production, Chinese collectives disincentivized producers and thereby stagnated labor productivity. As the argument goes, by re-establishing the family farm as the main production unit, the transition to the Household Responsibility System (HRS hereafter) solved the incentive problem and generated rapid productivity gains (Friedman, Pickowicz, and Selden, 2007; Ho, Eyferth, and Vermeer, 2004: 1–2; Lin, 1988, 1992; Nee, 1986; Nolan, 1988; Perkins and Yusuf, 1984; Selden, 1993).

The available data and existing literature reveal the limitations of the decollectivization thesis in several important respects. Since grain crops occupied most of the sown area in China in both the collective and post-collective periods (85 percent in 1957, 80.1 percent in 1980, and 76.5 percent in 1990; see State Statistical Bureau of the People’s Republic of China, 1993: 358), critics of the decollectivization thesis traced the trajectory of grain production to compare the historical performance of collective and decollectivized/family farms. Bramall (2000: 26) summarizes the finding of this comparison:

If the growth rate of grain production for 1965–75 had simply been maintained between 1975 and 1984, output in 1984 would have reached around 390 [million] tonnes—only a little below the figure of 407 [million] tonnes actually recorded and purportedly the product of decollectivization. In short, a continuation of late Maoist agricultural policies would have achieved almost the same level of grain production as the new transition policies.

Available sources on the subject allow for a straightforward comparison between the performances of collective and family farms in the same regions during the transition to the HRS. The rationale of this comparison is that the transition to the HRS did not happen overnight but occurred over the span of

six years. Chinese agriculture was almost entirely collective in 1978 and 1979. By the end of 1980, only 14.4 percent of farming units had returned to household farming. By the end of 1981, the national average rate of HRS adoption had reached 50 percent. It increased to 78.2 percent in December 1982 and reached 98.3 percent only in December 1983 (Chung, 2000: 64–65).

It is also important to recall that before the nationwide adoption of the HRS, significant agricultural policy changes took place during the reign of Hua Guofeng (Chinese Communist Party [CCP] chairman between October 1976 and June 1981), who was committed to maintaining collective farming; however, his policies diverged from Mao Zedong's in several critical respects. First, brigade-level accounting was marginalized by spring 1978, and team-level accounting was set to remain intact for the foreseeable future. Second, a return to household farming in poor and remote regions was permitted after March 1979. Third, starting from the summer of 1978, the Mao-era policy of "price scissors"—underpricing agricultural products and overpricing industrial products to carry out rapid industrialization—was reversed (Teiwes and Sun, 2016: 18, 49, 65–70). In 1979, the central government increased the average quota price of grain by 20 percent. Similar procurement price increases were implemented for almost all crops. The national grain tax was also reduced by 20 percent between 1978 and 1982 (Sicular, 1993: 48–67). Together with substantial increases in chemical fertilizer use¹ during the same period, Hua-era policies allowed Chinese agriculture to embark on a rapid growth trend. The compound annual growth rate of grain output rose from 2.55 percent in 1970–1976 to 5.51 percent in 1977–1979. Similarly, the compound annual growth rate of agricultural production value rose from 3.03 percent in 1970–1976 to 10.66 percent in 1977–1979.² Therefore, by the end of 1980, when collectives still comprised 85 percent of farming units, "there was no crisis and no wellspring of peasant demand for change on a major national scale" (Teiwes and Sun, 2016: 282).

Although the later Chinese administrations and academic literature often presented the reduction of peasant burden and household farming as different components of the same agricultural reform package, no top official made any such claim, at least until 1981. While the central leadership, cadres at all levels, and ordinary villagers had significant disagreements, the dominant approach among the central leadership was that maintaining collective farming while reducing the peasant burden was a feasible policy. In May 1979, Deng Xiaoping opposed the criticisms against the Dazhai model of rural collective economy promoted by Mao because "if Dazhai [was] criticized, peasants could not be mobilized for the necessary task of farmland capital construction." In January–February 1980, Deng argued that "as long as there

was good management in running the collectives, there would not be any big problems.” Li Xiannian (vice-chairman of the CCP between 1977 and 1982) supported the reduction of peasant burden while firmly opposing household farming (Teiwes and Sun, 2016: 6, 19, 115–37).

This historical context warrants two sets of comparisons, the first being China’s agricultural performance before and after 1981 and the second being the performance of collective and family farms that existed side by side within the same region during the transition period. The growth rate of gross agricultural value in China was 8.1 percent in 1978, 7.5 percent in 1979, 1.4 percent in 1980, 5.8 percent in 1981, 11.3 percent in 1982, and 7.8 percent in 1983 (Teiwes and Sun, 2016: 203). Hence, there was no significant difference favoring the post-HRS period. Moreover, comparison of the growth rate of grain output of the “pioneering” provinces (those that had earlier adopted the HRS) and the “orthodox” provinces (those that later adopted it) do not favor the pioneers (Teiwes and Sun, 2016: 121). Comparisons of collective and family farms in proximity also do not yield a different conclusion. Bramall’s study of Sichuan province (1995: 749–51), Huang’s study of Songjiang county near Shanghai (1990: 222–51), and Putterman’s study of Dahe township in Hebei (1989: 277, 296) demonstrate that both collective and family farms responded well to price incentives without significant productivity differences between them.

Finally, Xu’s recent works (2012a, 2012b) offer a strong alternative to Lin’s earlier econometric analyses (1988, 1992), which significantly contributed to the popularity of the decollectivization argument. Xu takes into account three important variables omitted in Lin’s analysis: weather conditions, the timing of the transition to the HRS, and the profit margins of main grain crops. After controlling for these three variables, Xu proves that the transition to the HRS did *not* significantly impact China’s agricultural productivity growth between 1978 and 1984. Xu (2017) also uses a “Collective Legacy Index” based on irrigation, literacy, and health care data, showing that the regional variation of agrarian development in the post-1978 era is highly correlated with the performance of each region before 1978.³

Hence, the decollectivization thesis has serious shortcomings. Moreover, a sizeable body of scholarship has documented the positive contribution of the collective system to the development of agricultural infrastructure in China (mainly irrigation, drainage, and electricity), implying that the agrarian success of the post-1978 era might not have been possible without rapid infrastructural development in the collective era (Bramall, 2000, 2007; Eisenman, 2018; Gao, 1999; Han, 2008; Huang, 1990; Patnaik, 1995; Saith, 2012). Furthermore, although labor supervision problems continued throughout the Mao era, the existing research documents successful cases of tackling

such issues. For instance, Eisenman and Yang (2018) show that county administrations in Henan province adjusted the size of communes and production teams between 1962 and 1966 in order to take advantage of the economies of scale while mitigating the free-rider problem, resulting in improved productivity.

Despite these important findings in the critical scholarship, there is no systematic analysis of the legacy of the collective era in China's agrarian development in the reform era. The existing literature on the subject has a narrow temporal scope that usually does not go beyond the 1980s.⁴ As for the collectivist legacy in the post-1990 period, scholars refer either to the long-term effects of infrastructural and human development in the collective era or to the collective rural industry (in the form of the township and village enterprises, or TVEs). No scholars have systematically analyzed the institutional legacies of the collectivist era in Chinese farming in the post-1990 era. By extending the temporal boundary of the analysis, this article aims to show that collectivist legacies in Chinese agriculture were relatively robust until the mid-2000s.

More specifically, this article makes five main arguments. First, I argue that the construction of robust agricultural infrastructure in the collective period substantially contributed to the implementation of an incentive policy based on high procurement prices during the 1980s. The Chinese government kept its agricultural infrastructure budget low without facing any significant infrastructural problem that would reduce farm productivity to pre-1980 levels. The resulting savings were considerable enough to cover an important portion of the huge costs caused by increased procurement prices, a key factor behind rising farmer incentives that resulted in productivity increases. Second, I show that village collectives were heavily involved in crop production (including input procurement, irrigation, and mechanized farming) at least until the late 1980s. Third, I demonstrate that the collectivist legacy of labor mobilization was relatively strong during the two decades following the HRS reform. Before the abolition of compulsory rural work in 2006, village collectives were able to mobilize villagers to work in infrastructure works for up to thirty days per year or collect extra fees from those who preferred not to participate in such work. Fourth, the collective-era legacy of local self-financing was also robust until the abolition of the agricultural tax in 2006. Continuation of labor and financial mobilization made up for an important part of the infrastructural deficit caused by spending cuts. Finally, the "one project, one discussion" 一事一议 (hereafter OPOD) system implemented since 2008 aims to partially reverse the 2006 reform and maintain the collectivist legacy (to a certain extent) in a new political-economic context. However, having encountered significant difficulties in mobilizing villagers'

funds and labor, the Chinese government reformulated the OPOD system as a subsidy scheme rather than a rural mobilization drive.

The rest of this article comprises seven sections. The first section briefly introduces the organizational legacies of the collective system in the reform era. The second section investigates the relationship between the infrastructural accomplishments of the collective period and the successful incentivization of farmers through higher procurement prices in the 1980s. The third section analyzes the collective organization of crop production in the 1980s. Labor mobilization and local self-financing until 2006 are examined in the fourth and fifth sections, respectively. The sixth section briefly examines the central government's OPOD policy and discusses recent local initiatives as manifestations of the Chinese state's continuing pursuit of maintaining the collectivist legacy. Finally, the concluding section summarizes the article's main arguments.

Organizational Legacies of the Collective System

The constitutional amendment passed in 1982 and enacted in 1984 transformed the three-tiered structure of the people's communes 人民公社 (comprising the production team 生产队 at the bottom, production brigade 生产大队 in the middle, and the commune 公社 at the top) rather than eliminating it. Communes were reorganized as township-level administrative units including townships 乡 and towns 镇. Brigades were reorganized as administrative villages 行政村, which continued to be called "collectives" 集体. In short, two tiers of the three-tiered structure were largely intact. The incumbent commune and brigade cadres remained in charge of the township and village administrations.

The division and redistribution of collective land to households, which became solely responsible for their profits and losses, undermined the material basis of the production team organization. However, rather than disbanding them altogether, the Chinese government reorganized the production teams as "natural villages" 自然村 or "villager groups" 村民小组. The increasing consolidation of family farming over time transformed many of these units into entities existing only on paper. Nevertheless, many villager groups remained real entities with practical significance. Although regions with strong lineage organizations posed greater resistance to state-imposed collectivization than other rural regions during the 1950s, they developed a mutually supportive relationship and symbiosis with the collective organizations in the following decades. The collective economy gradually acquired a stronger community basis, and the lineage community acquired a stronger economic basis in these regions. Large parts of eastern China (especially in

Guangdong, Guangxi, Fujian, and Jiangxi) belong to this category. Pockets of single-surname, lineage-based villages in provinces that generally have weaker lineage organizations (such as Hubei and Sichuan) also share similar characteristics. Unlike other regions, the villagers in these regions continued to elect group heads, organize collective works, and raise funds for them (He, 2006a, 2006b, 2006c; Huazhong University of Science and Technology China Rural Governance Research Center, 2012; Lin, 2011; Shen, 2009; Tian, 2018).

This article shows that township and village administrations (together with villager groups, particularly in the above-mentioned regions) continued to be heavily involved in labor mobilization, tax and fee collection, and, to a lesser but still considerable extent, crop production until 2006. Overall, what happened in the 1980s was not pure decollectivization but a shift from *completely collective* to *semicollective* agriculture.

The Link between Infrastructural Development before 1978 and the Material Incentives Given to Farmers after 1978

As previously noted, a dramatic increase in procurement prices and reduction of the grain tax were among the most important agricultural policy changes after 1978. Furthermore, the government kept its storage gates open and committed itself to purchasing deliveries from farmers. As a result, contrary to the pre-1978 period during which peasants had sold less to the state and more on the black market because of the low procurement prices, farmers did their best to sell as much as possible to the state because of high procurement prices. On the other hand, the populist pricing policy proved unsustainable. State price subsidies for grain, oil-bearing crops, and cotton reached 12 percent and 17 percent of all government revenues in 1980 and 1982, respectively. The government's storage capacity also decreased from 1.78 units (of capacity for one unit of procured grain) to 0.7 units in 1983 (Oi, 1986: 274–75). As the cost of food subsidies for urban consumers and the losses caused by inadequate storage capacity soared, China arrived at the brink of a fiscal crisis within a few years (Oi, 1986: 273–75; Sicular, 1993: 66–67; Stone, 1985: 116).⁵

The growing fiscal problem was a key factor behind the central government's push for a rapid nationwide transition to the HRS after 1981, a fact mostly overlooked in the existing literature. The growing fiscal crisis caused by pro-peasant pricing and investment policy (primarily associated with Hua Guofeng) precipitated a series of policy debates within the party-state

Table 1. Changing Priorities in Chinese Government Agricultural Spending, 1978–1990 (billion yuan).

Year	Capital Construction	Price Subsidies
1978	5.334	1.114
1979	5.792	5.485
1980	5.203	10.280
1981	2.921	14.222
1982	3.412	15.619
1983	3.545	18.213
1984	3.712	20.167
1985	3.591	23.218
1986	3.506	21.161
1987	4.211	23.817
1988	4.746	24.443
1989	5.065	30.000
1990	6.722	30.939

Source: State Statistical Bureau of the People's Republic of China (1984: 308; 1991: 156, 223).

Note: Price subsidies include grain, cotton, and edible oil subsidies between 1978 and 1990 and subsidies for the increase in meat prices between 1985 and 1990.

leadership; these debates resulted in a post-Hua consensus based on the substitution of household farming for generous state spending. Rather than presenting household farming as a more productive system, the chief architects of the new policy (such as Zhao Ziyang and Hu Yaobang) legitimized their stance primarily on short-term fiscal grounds. While acknowledging the remarkable agricultural performance of the previous few years, Zhao and Hu argued that there was no room for a further increase in state spending and that the best short-term fiscal fix was to devolve production responsibility to households (Teiwes and Sun, 2016: 149–59, 203, 236–41).

Apart from the nationwide adoption of the HRS, the other critical policy change was the abolition of the unified sale and purchasing system 统购统销 and the adoption of the contract system 合同订购 in 1985, which partly absolved the state from the responsibility of purchasing the bulk of crop deliveries. State procurement decreased by 20 percent in 1985 (Oi, 1986: 283). Although the growth rate of procurement prices decelerated after 1984, the Chinese leadership did not return to the low-price policy of the pre-1978 period so as to avoid alienating the farmers. As Table 1 demonstrates, price subsidies continued to absorb a significant amount of expenditure in the second half of the 1980s. Despite its limited success in cutting price subsidies, the Chinese government managed to dramatically decrease infrastructure

spending. Spending on agricultural capital construction as a proportion of total central government spending was significant in the entire collective era: 7.1 percent between 1953 and 1957, 11.3 percent between 1958 and 1962, 17.7 percent between 1963 and 1965, 10.7 percent between 1966 and 1970, 9.8 percent between 1971 and 1975, and 10.5 percent between 1976 and 1980. It declined sharply in the following decade, to 5 percent between 1981 and 1985 and 3.3 percent between 1986 and 1990 (State Statistical Bureau of the People's Republic of China, 1991: 156).

This periodic comparison provides the rationale behind an alternative explanation as to how much money the Chinese government would have had to spend in the 1980s to keep up the investment level of the previous period in the case that the collective economy did not meet most of the infrastructural needs of the agricultural sector. Since the investment level between 1976 and 1980 (10.5 percent) was not higher than the average level of the previous two decades, it can serve as the basis of this alternative scenario. The Chinese government invested 41.431 billion yuan for agricultural capital construction between 1981 and 1990 (17.181 billion yuan between 1981 and 1985 and 24.25 billion yuan between 1986 and 1990). If it had intended to keep allocating 10.5 percent of its total investment to agricultural capital construction, it would have had to spend 113.239 billion yuan ($[10.5/5] \times 17.181 + [10.5/3.3] \times 24.25$) between 1981 and 1990. This figure is 71.8 billion yuan higher than what it actually invested. Since the total government spending on price subsidies for grain, cotton, edible oil, and meat was 221.799 billion yuan in this period, spending cuts for agricultural capital construction covered 32.4 percent of the price subsidies between 1981 and 1990.⁶

The accomplishments of Chinese rural collectives in agricultural capital construction significantly contributed to the implementation of the populist price policy. As the collectives mobilized the labor and financial resources of the rural population, the Chinese state developed its hydraulic infrastructure beyond its limited fiscal power. The nationwide share of effectively irrigated land tripled within three decades (from 16.3 percent in 1949 to 49.4 percent in 1982), making China one of the most hydraulically developed nations in the world. Hence, the irrigated area increased by only 1.2 percent (from 49.4 percent to 50.6 percent) between 1982 and 1990 (Editorial Board of the Water Conservancy Yearbook of China, 1992: 653). The collectives also rapidly constructed and strengthened dikes and drainage facilities (Greer, 1979; Zhang, 2014) and mobilized the people to mitigate negative effects of natural disasters, thereby reducing crop losses caused by flood and drought (Kueh, 1995: 26). In sum, collectives passed down a strong hydraulic infrastructure.

The Chinese government would not have made such a significant cut in its capital construction expenditure had it not been confident about the strength of the agricultural infrastructure constructed in the collective era. Otherwise, the budget deficit caused by high procurement prices could have been much greater. Given the fact that even the actual budget deficit proved unsustainable and forced the government to slow down procurement price increases after 1985,⁷ the extent of these increases (and thereby of farmer incentives and productivity) could have been much more modest had it not been for the strong agricultural infrastructure inherited from the collective era. Although problems with infrastructure maintenance contributed to the slowdown of the land productivity growth rate in the second half of the 1980s, the collective-era legacy of a robust hydraulic infrastructure ruled out an absolute productivity decline to pre-1980 levels. This appears to be a significant contribution of the collective system to the agriculture of the 1980s, a point that has been overlooked by the decollectivization thesis.

Collective Farm Organization

Contrary to the assumption in the existing scholarship that households became entirely dominant in crop production after the HRS reform, village administrations (often called “village collectives”) remained highly involved in crop production throughout the 1980s. The Rural Cooperative Organizations Task Group of the Economic Policy Research Center of the Ministry of Agriculture 农业部经济政策研究中心农村合作组织课题组 published the results of the largest survey on this topic in 1989. The survey included 1,200 villages from 100 counties located in all Chinese provinces and provincial-level cities except Shanghai and the Tibet Autonomous Region. By following the official division of the country into three macro-regions, the survey compared property ownership and farm management in eastern, central, and western provinces. The survey’s findings shed light on the legacy of collectivist farm organization in the 1980s.⁸

Many of the collective assets were auctioned off to the highest-bidding households during the HRS reform. Nevertheless, the share of the collective assets within total assets remained significant. As Table 2 demonstrates, 45 percent of all fixed productive assets were under collective ownership as late as 1987. The survey data considers the important difference between assets owned and used collectively versus those owned collectively but contracted out to households. The latter category also contributed to collective organization because the fees that households paid were used to develop the collective economy. However, the former category is a better indicator of the capacity

Table 2. Distribution of the Possession of Fixed Productive Assets in Chinese Villages, 1978–1987 (Percentage of All Assets).

	1978	1980	1984	1987
Household	9.4	12.4	45.9	52.1
Collective:	90.6	87.6	52.4	44.9
1. In collective use	88.6	84.6	44.2	40.5
2. Contracted out to households	2.0	3.0	8.2	4.4
Other types of cooperatives	0	0	1.7	2.9

Source: The Rural Cooperative Organizations Task Group of the Economic Policy Research Center of the Ministry of Agriculture (1989: 6).

Note: The source providing the data does not give a strict definition of the term “联合拥有” (which can be translated as “jointly owned” or “joint ownership”). It uses the term loosely, referring to various forms of cooperative management by the villagers. For this reason, I use the term “other types of cooperatives” in the table.

Table 3. The Proportion of Surveyed Villages Organizing Specified Farm Tasks and Services Collectively in 1984 and 1987 (by Percentage).

	All China		East		Central		West	
	1984	1987	1984	1987	1984	1987	1984	1987
Tractor ploughing	46	44	81	75	36	34	20	23
Irrigation and drainage	56	53	88	85	61	57	28	15
Purchase of inputs	50	48	61	59	49	45	40	39
Plant disease prevention	56	51	48	46	60	52	69	56
Harvesting	20	17	19	17	14	19	27	15
Threshing	33	34	49	50	18	24	33	28
Transporting grain	9	8	15	9	11	12	3	4
Marketing	47	23	49	20	38	21	54	30
Technical training	46	39	44	30	57	41	49	45
Consultancy and accounting	42	33	90	50	35	23	31	11

Source: The Rural Cooperative Organizations Task Group of the Economic Policy Research Center of the Ministry of Agriculture (1989: 11).

of the collectives for farm organization. The fact that assets under collective use comprised 40 percent of all assets indicates that it remained strong.

Table 3 demonstrates that a significant percentage of the villages continued to organize crucial farm operations and services collectively in the 1980s. It appears that the percentage of the collective farm operations and services (nearly 100 percent by 1978) fell quickly during the transition to the HRS but

Table 4. The Degree of Collective Organization of Agricultural Production in Three Macro Regions of China in 1984 and 1987 (Percentage of All Surveyed Farms).

	East		Central		West	
	1984	1987	1984	1987	1984	1987
Village (or group) organizes ploughing	80	76	40	34	27	20
Village (or group) organizes irrigation	87	85	43	36	25	16
Village (or group) purchases seeds	55	46	34	17	28	15
Village (or group) purchases fertilizer	56	50	38	30	27	21
Village (or group) purchases pesticide	57	51	39	26	26	23
Village (or group) purchases diesel oil	76	65	48	29	35	20
Village (or group) purchases agricultural film/membrane	57	45	58	37	54	36

Source: The Rural Cooperative Organizations Task Group of the Economic Policy Research Center of the Ministry of Agriculture (1989: 12).

remained significant in the second half of the 1980s. The share of the villages that organized farm operations collectively within all surveyed villages was 44 percent in tractor ploughing, 17 percent in harvesting, and 34 percent in threshing. This finding suggests how the previous gains were maintained in mechanized farming despite the division of collective land among households. Table 3 also shows that more than half of the villages organized irrigation services in 1987. More importantly, a significantly larger proportion of these operations and services were organized collectively in the most advanced rural regions—that is, those in eastern China—than in the central and western provinces.

Table 4 shows that village administrations and villager groups were responsible for key farm operations and input procurement. Since in many villages mechanized operations were carried out as before, regardless of the borders drawn between different households' farms, the previous gains in mechanized farming were preserved to a significant extent. This phenomenon directly assisted rural industrialization because continuous mechanized farming enabled rural households to maintain high output levels without keeping much of their labor force in agriculture. On the other hand, reflecting the efforts in the collective era to extend farm mechanization and rural industrialization in less developed areas, the figures for the central and western regions should not be neglected either.

Legacies of collective farm organization weakened in the 1990s and early 2000s. According to a nationwide survey of 6,442 villagers conducted by

China's Rural Problems Research Center 中国农村问题研究中心 in July–August 2005, the combined share of nonindividual forms of organization (including government departments, self-organized peasant technology associations, and village administrations) was 26.4 percent in plant disease and pest control and 26.3 percent in obtaining information about new crop varieties. Eighty-eight percent of the respondents said that they individually purchased farm inputs such as chemical fertilizers, whereas 9.2 percent of the respondents relied on collective purchases and 2.1 percent on joint purchases with other households. Eighty-seven percent of the respondents were purchasing or renting farm machinery on an individual basis, whereas only 10.7 percent were purchasing and using machinery as a collective or group of households. Approximately 40 percent of the villagers reported that “everyone takes care of themselves and does not engage in farmland water conservancy construction” (Cheng and Chen, 2006: 3; Chen, 2014: 182).

Collective farm organization weakened because of three main reasons. First, the disappearance of the “work point system” gradually eradicated the organizational basis of collective farm management. Before the HRS, millions of brigade and team leaders were allocating substantial time to farm organization; they were not on the state payroll, and their organizational labor was remunerated by work points. With the disappearance of the work point system, previous brigade and team leaders stopped devoting their time to collective farm organization and, like other households, focused instead on increasing their own household incomes. Township officials were unable to fill the vacuum created by the disappearance of brigade and team leaders:

As authority at the levels of the brigade and production team weakened with the disbanding of collective production, some of their remaining workload moved upward. In addition, the commune's previously generalized functions had to be specialized to cope with a variety of new issues and tasks arising from decollectivization. However, the central reformers obviously did not regard the commune's new functions as important enough to deserve personnel recruitment. (Chen, 2014: 100)

Second, with the gradual relaxation of the *hukou* restrictions on rural outmigration, a large proportion of young villagers—whose number increased to over 100 million in 1993 and over 200 million in 2005 (Yang, 2012)—took urban jobs, leading to a rapid aging of the agricultural sector workforce, a change not conducive to collective organization.

Finally, the Chinese government's support for capitalist farming (particularly since the late 1990s) also propelled the further decollectivization of farming. For example, “village irrigation facilities continued to be

community property and water was allocated equally to households in exchange for water fees and compulsory labor” in the Ningxia Hui Autonomous Region after 1978. However, “irrigation facilities were leased to big farm operators and control over water became an effective economic weapon to compel villagers to transfer land” to big farm operators in the 2010s (Luo and Andreas, 2020: 1205).

Compared to the highly complex nature of maintaining collective farm organization under such conditions, maintaining the collective-era legacy of the mobilization of the labor and financial resources of the villagers for agricultural infrastructure works proved a relatively easier job. Following the massive labor migration to the cities in the 1990s, rural hukou holders were allowed to pay an extra fee instead of participating in compulsory labor tasks, further simplifying the tasks of the village and township cadres (Deng, 2003; Takeuchi, 2014: 73). As the following two sections show, village and township administrations were able to collect taxes and fees on an annual basis; this significantly contributed to maintenance of the collective era’s infrastructural achievements.

Labor Mobilization for Infrastructure Works

The Chinese government relied on the mobilization of labor and financial resources of the villagers in the construction and maintenance of agricultural infrastructure from the early 1950s to the mid-2000s. Since the beginning of rural collectivization (1952–1956), government documents emphasized the principle of self-reliance in public works. For instance, the “Instructions on the Mobilization of the Masses to Continue to Carry Out Drought Prevention and Relief Activities and Vigorous Promotion of Soil and Water Conservation Works” 关于发动群众继续开展防旱、抗旱活动并大力推行水土保持工作的指示, publicized by the Administrative Council of the Central People’s Government on December 29, 1952, stated that construction and maintenance of agricultural infrastructure should rely on rural labor, while government spending should play only a supplementary role in this process (Liu et al., 2007: 111). With the completion of rural collectivization in 1956, the use of unpaid labor in infrastructure works became systematic.

Chinese rural collectives mobilized the villagers for unpaid labor under the framework of the “two works” system 两工制度, which referred to the combination of “compulsory work” 义务工 and “labor accumulation work” 劳动积累工. Compulsory work referred to infrastructure work undertaken without any type of remuneration. Able-bodied collective members at or above the age of sixteen had to allocate about 3 percent of their total work-days to compulsory work. However, Chinese villagers usually spent more

than 3 percent of total workdays in building infrastructure. For example, during the 1970s, over 80 million villagers participated in infrastructure construction campaigns every year, working about thirty days on average (Nickum, 1978: 282). Labor accumulation work referred to all infrastructure work in excess of the 3 percent limit, remunerated with work points like all other types of collective work (Chinese Communist Party Central Committee, 1980 [1962]: 145–46). Hence, labor accumulation work was not unpaid labor in the *formal legal* sense of the term. However, with the exception of large-scale projects where the government covered a part of the payment of the mobilized labor force, rural collectives generally paid for labor accumulation work out of their own budget. In other words, collective members allocated a part of their total output to pay themselves for their labor accumulation work (Gürel, 2019: 1030; Wakashiro, 1990: 491).⁹

Although the HRS reform decreased the state capacity in the countryside, Chinese government agencies, official media, and policy-oriented academics made considerable effort to keep the “two works” system intact during the 1980s and 1990s. Without questioning the HRS reform, they complained about the decline of agricultural infrastructure as an unwarranted outcome of the HRS. Academic publications and media reports often used an alarmist discourse about the infrastructural decline to highlight the negative effects on economic development and people’s livelihoods. For instance, in 1986, Lu Wen, a member of the Rural Development Research Center, wrote the following:

In the past few years we have basically been consuming our previous investments into water conservation in agriculture. . . . Since the Household Responsibility System was implemented, most regions have simply stopped water conservation projects. At the same time a number of irrigation systems have broken down, and many left unrepaired. (cited in Wakashiro, 1990: 490)

Moreover, a *People’s Daily* editorial published on May 3, 1987, complained that, while assessing agricultural development, many cadres thought only about production and profits and neglected infrastructural problems (Renmin ribao, 1987a). In January 1988, the Chinese Academy of Sciences published a report claiming that small and medium-scale water conservancy projects had been suspended throughout rural China since 1984 because of the neglect of collective work (Nickum, 1990: 284). Interestingly, explanations of the logic of labor mobilization in the press were similar to those of the 1960s and 1970s. Like some *People’s Daily* editorials in the 1960s and 1970s, the editorial mentioned above suggested that, although the rapid development of the national and rural economy had helped absorb increasing amounts of rural

labor, absorbing the total surplus labor and solving the problem of rural underemployment would require several decades. It was therefore necessary to tap this surplus labor to assist economic development. Given that long-term neglect of agricultural infrastructure would adversely affect agricultural performance, the editorial recommended revitalizing labor accumulation by collectively mobilizing rural labor to fulfil urgent infrastructural tasks. The substitution of (still relatively scarce) capital with labor in this manner would help reduce the fiscal burden on the central and local governments. Hence, labor mobilization had to be included in the agricultural policy for the foreseeable future (Renmin ribao, 1987a).

This growing awareness of the necessity and feasibility of employing surplus rural labor encouraged local administrations to put it into practice. Cases of successful implementation of the “two works” system were also publicized in academic publications as examples to be emulated in the rest of the country. For instance, Xing Lu (1991) reported that rural areas under the jurisdiction of Changde city in Hunan province lost 570,000 *mu* of irrigated area in the 1980s because of local cadres’ neglect of “hard and inconvenient tasks” such as labor accumulation work and presented Anxiang county as a promising case because its local cadres had revived labor accumulation work and collected funds from the villagers.

Similarly, as early as the HRS reform was completed, central government documents began to reemphasize the importance of self-reliance in infrastructure works. One of the earliest examples was the State Council’s “Regulations on Soil and Water Conservation Works” 水土保持工作条例 of 1982. While acknowledging the central government’s responsibility to financially support local governments, the document also required rural administrations to cooperatively manage soil and water conservancy works based on self-reliance and mass mobilization. The Central Government No. 1 Document 中共中央一号文件 of 1983 entitled “Several Issues Regarding the Current Rural Economic Policy” 当前农村经济政策的若干问题 stressed that small-scale infrastructure works should be financed by the accumulation of local funds and labor accumulation work. The No. 1 Document of 1986 entitled “On the Deployment of Rural Work in 1986” 关于一九八六年农村工作的部署 required all local administrations in the countryside to strengthen the labor accumulation system and cooperation among villagers in soil and water conservation works (Liu et al., 2007: 111). In 1987, the Ministry of Water Resources and Electric Power called on every rural resident to devote at least ten workdays to hydraulic works (Wakashiro, 1990: 497). In 1988, the State Council published the “Circular of the Ministry of Water Resources on Relying on the Cooperation of the Masses to Build Rural

Water Conservancy Facilities” 水利部关于依靠群众合作兴修农村水利意见的通知, which stated:

Relying on the masses to build rural water conservancy is a traditional practice of our country. From now on, the construction of rural water conservancy should still be based on the principle of self-reliance and state support, carrying out labor accumulation, raising funds at multiple levels and through multiple channels for the construction of rural water conservancy. (Liu et al., 2007: 111)

A clear redefinition of the “two works” system was made in “The Regulations on the Expenses and Labor Services Shouldered by the Villagers” 农民承担费用和劳务管理条例, promulgated by the State Council in December 1991. The document granted township and village administrations the authority to demand that each working-age villager contribute five to ten workdays as compulsory labor and ten to twenty workdays as labor accumulation work. Local governments were also allowed to demand more labor contributions when necessary (State Council of the People’s Republic of China, 1991). The agricultural law that came into effect in 1993 required villagers to collect funds and undertake labor accumulation work for the development of agricultural infrastructure and allowed the government to “supplement” the contributions of the masses (Liu et al., 2007: 111).

Although villagers’ responses to these calls varied according to region, the central government’s emphasis on the collectivist legacy of labor mobilization made a difference in many areas. For instance, in the winters of 1985 and 1986, 39 million villagers worked on capital construction projects. Nearly 1.5 billion cubic meters of earth and stone work was completed in the country in winter 1985, and 2 billion cubic meters of work was completed in 1986 alone (Nickum, 1990: 290; Stone, 1993: 323; Wakashiro, 1990: 497). In winter 1987, in Zhongyang, Liulin, and Xiaoyu counties, Lüliang district, western Shanxi, where agricultural infrastructure had declined in the previous few years because of funding cuts, every able-bodied villager (with no job outside the village) was obligated to spend thirty days on construction. As a result, 4.5 million workdays were spent on agricultural capital construction (Renmin ribao, 1987b). In Fuzhou prefecture, Jiangxi province, local administrations mobilized surplus rural labor for construction activities. In Linchuan county, the local administration called on each villager to devote thirty days to capital construction works. As a result, a reservoir with a capacity of 1.1 million cubic meters, capable of irrigating 5,000 mu of farmland, was constructed.¹⁰ In Fuzhou as a whole, 11.05 million workdays were devoted to hydraulic works, through which 13.11 million cubic meters of earth and stone work

were completed. This collective effort added 40,000 mu of irrigated farmland that was protected from flood and drought (Renmin ribao, 1987c).

The mobilization of unpaid labor continued to be significant in the 1990s and early 2000s. The national average amount of unpaid labor undertaken by each working-age villager in capital construction was 17.2 days in 1990, 20.2 days in 1991, and 17 days in 2000 (Aubert and Li, 2002: 161; Li, 1992: 49). Zhang et al.'s (2006: 59–62) survey of nearly 2,500 villages in Gansu, Hebei, Jiangsu, Jilin, Shaanxi, and Sichuan shows that between 1998 and 2003 more than 85 percent of Chinese villages participated in at least one infrastructure project per year. In 56 percent of these projects, villagers worked without remuneration. On average, each household contributed five days of unpaid labor to each project. Local surveys confirm these findings. In Anhui, villagers devoted 2.87 billion workdays to labor accumulation work on 763,000 construction and maintenance projects between 1996 and 2000 (Jia and Bi, 2000: 4). In Jiangsu, each working-age villager contributed seventeen workdays on average (906 million in total) to local infrastructure projects in 1998 and 1999 (Cai, Ge, and Fan, 1999: 35).

Table 5 goes beyond the local data to paint a nationwide comparative picture regarding the collective mobilization of rural labor from 1950 to 2005. As the table shows, Chinese villagers allocated over 16.89 billion workdays to soil and water conservancy projects between 1950 and 1990. Amid widespread complaints about the decline of agricultural infrastructure due to the neglect of “two works,” the actual level of labor mobilization remained considerable between 1991 and 2005. The number of workdays spent on soil and water conservancy projects was 5.28 billion between 1991 and 1995, 6.94 billion between 1996 and 2000, and 5.66 billion between 2001 and 2005. Overall, the proportion of villagers’ contributions (in terms of workdays and their monetary equivalent) in total investment in soil and water conservancy was 70.9 percent between 1950 and 1990, 93.3 percent between 1991 and 1995, 91 percent between 1996 and 2000, and 80.1 percent between 2001 and 2005.

In sum, the institutional legacy of labor mobilization for agricultural capital construction of the collective era was maintained after decollectivization and remained strong up until the abolition of the “two works” system in the mid-2000s. Chinese villagers continued to self-finance the bulk of the country’s agricultural investment in this period. This institutional continuity helped maintain the infrastructural gains of the Mao era, distinguishing China from other large and populous countries of the Global South that had to pre-finance agricultural capital construction projects because of lack of a similar mobilization policy and capacity during the entire post-1950 period (Saith, 2012).

Table 5. Soil and Water Conservation Investment by the Government and Villagers in China (1950–2005).

	1950–2005	1950–1990	1991–1995	1996–2000	2001–2005
Government investment					
Investment by the central government (billion yuan)	17.846	4.49	1.283	4.227	7.846
Investment by local governments (billion yuan)	21.667	6.887	1.568	3.691	9.521
Total (billion yuan)	39.513	11.377	2.851	7.918	17.367
Government investment as % of total investment	15.36	29.05	6.65	9.01	19.89
Villagers' investment					
Labor investment (billion workdays)	34.788	16.898	5.281	6.949	5.66
Monetary equivalent of villagers' labor investment (billion yuan)	217.712	27.784	40.015	79.944	69.969
Villagers' investment as % of total investment	84.64	70.95	93.35	90.99	80.11

Source: Liu et al. (2007: 112); see also Research Group on Comprehensive Policy for the Prevention and Control of Soil and Water Loss in China (2009: 7).

Collective Self-Financing for Agricultural Infrastructure Construction

In the collective era, public accumulation funds of the collectives covered both labor and capital costs of the small and medium-scale infrastructure projects directly organized by the communes and brigades. Depending on the importance of each project, the state sometimes provided limited subsidies, but the collectives always covered most of the costs of the infrastructure established solely within their jurisdictions (Chinese Communist Party Central Committee, 1980 [1962]: 145–46). In addition, between 1958 and 1981, Chinese collectives transferred more than 5 percent of their net income to the state as direct tax, over 6 percent to collective accumulation funds, and another 1.6 percent to collective welfare funds.¹¹

Like the communes and brigades of the pre-reform era, township and village administrations of the reform era continued to effectively carry out taxation and fundraising tasks until 2006. The financial burdens of the villagers during this period can be divided into two categories. The “within-budget funds” included the agricultural tax and other related taxes such as the special products tax, slaughter tax, farmland utilization tax, contract tax, animal husbandry tax, and education surcharge. The “extrabudgetary funds” included the fees collected from migrants who preferred not to participate in labor mobilization, the “five township-pooling funds” (compulsory education, family planning regulation, welfare for veterans, training for the militia, and road construction), and the “three village levies” (administrative costs, wages of village officials, and the provision of public goods) (Lin and Liu, 2007: 4; Takeuchi, 2014: 72). Township and village administrations also collected various miscellaneous fees “for anywhere between a dozen up to more than 100 items” (Lin and Liu, 2007: 6) such as road and school construction, purchasing of insurance, marriage certificates, and various other charges (Takeuchi, 2014: 72).

As examined above, the central government significantly decreased its investment in agricultural capital construction in the 1980s. The collective accumulation funds were also drying up because of the administrative overhaul following the HRS transition. These local funds had to be reestablished to compensate for the decrease in the central government’s investment. In the second half of the 1980s, the central government reemphasized the principle of “beneficiaries bear the burden” 谁受益谁负担 and called for townships and villages to reestablish collective accumulation funds to help pay for infrastructure costs. In turn, local administrations demanded that rural hukou holders working in urban areas hire others to participate in “two works” or pay a fee to the local government (Renmin ribao, 1987a, 1987b, 1987c). In

Table 6. Agricultural Expenditure by the Central Government and Collective Rural Industries (Billion Yuan).

Year	CG	CRI	CRI as a Proportion of CG (%)
1978	15.066	2.63	17.45
1980	14.995	2.27	15.13
1985	15.362	3.00	19.52
1989	26.594	7.06	26.54
1990	30.784	7.78	25.27

Source: State Statistical Bureau of the People's Republic of China (1993: 225); Editorial Board of Township and Village Enterprises and Agricultural Products Processing Industry Yearbook of China (1991: 133).

Note: CG = central government; CRI = collective rural industries. Collective rural industries refer to the commune and brigade enterprises (for 1978 and 1980) and township and village enterprises (for 1985, 1989, and 1990).

this way, the villagers from sixteen provinces contributed one billion yuan to local funds in 1987 (Editorial Board of the Agricultural Yearbook of China, 1988: 88). This amount was equal to 23.7 percent of the central government's total investment in agricultural capital construction that year.

Implemented after 1985, the policy of "using industry to subsidize agriculture" 以工补农 served a similar purpose. It obligated collective rural industries to allocate a part of their profits to local agriculture (Nickum, 1990: 292; Sicular, 1993: 76). As Table 6 demonstrates, this policy was not entirely new because collective rural industries had supported local agriculture in 1978 and 1980, when collective agriculture was still dominant. Their financial contribution to agriculture remained significant throughout the 1980s, hence reflecting the continuation of the collectivist legacy of local self-financing (Nickum, 1990: 292; Sicular, 1993: 76; Wen and Chang, 1999: 80–81).¹²

Overall, the share of taxes and fees deducted from villagers' income was 6.8 percent between 1985 and 1989, and 9.2 percent between 1990 and 2000. To put these figures in proper historical perspective, it is important to remember the significantly negative effects of the 1994 tax-sharing reform on local government finances. Local governments' share of fiscal receipts decreased from 78 percent in 1993 to 44.3 percent in 1994 (Chen, 2014: 60). Township and village administrations responded to this development by boosting their extrabudgetary funds through the levying of additional fees. The share of these funds in local governments' revenues rose from 26 percent in 1993 to 41 percent in 1994 and remained within the range of 36–38 percent in the late 1990s (Takeuchi, 2014: 70; see also Göbel, 2010: 51). These funds also

helped the local administrations avoid a sudden infrastructural decline after 1994. For instance, Zhang et al.'s survey (2006: 62) in Gansu, Hebei, Jiangsu, Jilin, Shaanxi, and Sichuan found that the monetary contributions of villagers covered 47 percent of local infrastructure spending between 1998 and 2003.

Although collective financial mobilization was undoubtedly robust, China's agricultural infrastructure still faced significant problems because local officials spent a considerable portion of the collected funds for unrelated purposes. During the reform era, local governments operated under great pressure from their superiors to boost local GDP and implement key reforms such as family planning and the nine-year compulsory education system. The enormity of these requirements led to a dramatic increase in personnel on township payrolls (Chen, 2014: 82–83, 100–103). While local governments of advanced regions with strong rural industry and commerce were fiscally stronger because of their substantial tax revenues, those in underdeveloped agricultural regions were fiscally insolvent. By boosting the central government revenue at the expense of local governments, the tax-sharing reform of 1994 aggravated this problem (Chen, 2014: 59–67; Göbel, 2010: 51–54; Takeuchi, 2014: 68–70). Revenue-starved local governments tended to spend their agriculture-related revenues on other venues prioritized by higher-level administrations.

Local government corruption also played a role in this process. “Despite repeated official admonitions to ‘use water [fees] to support water’ (*yi shui yang shui*)” (Nickum, 2010: 546), rural China lacked a “mechanism to ensure that the money was allocated back into the irrigation system” (Turner and Nickum, 1998: 149). Consequently, some regions “experienced problems with water conservancy funds being ‘eaten’ by being overdrawn, embezzled, lent-out, or even used to build roads or houses or to supplement wages,” leaving many irrigation departments “only half of the fees which were actually collected” (Turner and Nickum, 1998: 149). Nevertheless, even the scholars that are most critical of the reform-era rural governance stress that the maintenance of the “two works” system and collection of taxes and fees significantly helped local administrations to maintain irrigation infrastructure until the tax reform of 2006 (He, 2020: 130; Chen, 2018: 158–59).

The pace of infrastructural development decelerated during the reform era because of these problems. The annual growth rate of effectively irrigated farmland declined from 4.01 percent in 1950–1978 to 0.06 percent in 1978–1990, 1.07 percent in 1990–2000, and 1.15 percent in 2000–2010 (Wang et al., 2019: 130). Nevertheless, these figures also reveal that the hydraulic achievements of the collective era were protected and even expanded, albeit at a much slower pace than in the collective era. As Nickum (a well-known expert on Chinese irrigation) noted in 2005, despite its various flaws, “we

cannot say that the irrigation sector has failed. . . . Further efforts are no doubt necessary to improve performance. . . . Nonetheless, China's agricultural sector has prospered despite these deficiencies" (Nickum, 2005: 96).

The Chinese Government's Pursuit of Maintaining the Collectivist Legacy after 2006

The growing "peasant burden" caused by high taxes and fees was a primary cause of the rise of rural unrest in China in the 1990s. By the late 1990s, Chinese official media presented the burden as a cause of "extreme anger" among the villagers, creating a situation that was "extremely unfavourable to the maintenance of overall social stability" (Bernstein and Lü, 2000: 753). As previously noted, poorer regions without much rural industry depended more on agricultural taxes and fees than industrialized rural regions. Villagers' perception of and resistance to the financial burden was closely related to the growing class and regional inequalities in the reform era. Although the peasant burden was heavier in the Mao era, "since there was little variation in personal affectedness," villagers "tended to accept the burden as something everyone had to shoulder." In the reform era, however, "the 'problem' was rooted not so much in the overall burden level than in the regressive nature of government exactions, which strongly disadvantaged peasant households with low incomes" and led them to "feel marginalized and subject to unfair treatment" (Göbel, 2010: 32).

In 2000, the CCP Central Committee and the State Council announced the decision to abolish the agricultural tax and "two works" system to contain rural unrest. This decision also resulted from growing self-confidence about the country's economic development, based on which the 2004 report of the Central Economic Work Conference 中央经济工作会议 stated that China had reached the stage at which industry was capable of feeding agriculture 工业反哺农业 (Liu, 2017). Like the HRS reform, whose implementation had taken six years, the abolition process was completed in 2006.

Chinese academic and policy circles have intensively discussed the consequences of this policy. Interestingly, many academic publications and policy documents discussed the potential negative consequences of this reform immediately after its announcement; and criticism of the reform has remained significant ever since. Given that openly challenging the central government is out of the question, critical assessments have often paid lip service to the reform as a necessary measure to solve the problem of arbitrary collection of taxes and fees and unreasonable labor demands on villagers. However, such praise is often followed by statistical and fieldwork-based assessments

suggesting that township and village administrations face serious financial bottlenecks in maintaining agricultural infrastructure because of their inability to mobilize labor and villagers' financial resources.

The fact that the central government increased its infrastructure investment during the same period is appreciated, although it has been widely recognized that government investments cannot entirely substitute for the huge loss of villagers' labor and financial contributions. For instance, Liu et al. (2007) noted that China's agricultural infrastructure had developed rapidly thanks to the "two works" system, warning policy makers that the central government's financial resources were still limited and that the soil and water conservation projects required considerable "labor accumulation." Similarly, the Research Group on Comprehensive Policy for the Prevention and Control of Soil and Water Loss in China 中国水土流失综合防治政策研究课题组 (2009) reported that the abolition of the agricultural tax and the "two works" system had negatively affected efforts to prevent soil erosion. It also called for a new framework for sharing infrastructure costs with beneficiaries.

The central government has taken these concerns seriously and has implemented measures to at least partially reverse the negative infrastructural consequences of the 2006 reform. First, the "two works" system was not abolished in all parts of China in 2006; it was abolished in the Xinjiang Uyghur Autonomous Region in February 2017 (Xinlang xinwen, 2017) and in the Ningxia Hui Autonomous Region it "remains an important means for village cadres to raise funds" (Luo and Andreas, 2020: 1201).

More importantly, in order to minimize the risk of infrastructural decline, the central government installed the OPOD system in 2008. According to the "Notice on Launching the Pilot Work of One Project, One Discussion Financial Rewards and Subsidies for the Construction of Village-Level Public Welfare Facilities" 关于开展村级公益事业建设一事一议财政奖补试点工作的通知, jointly publicized by the Comprehensive Rural Reform Working Group of the State Council 国务院农村综合改革工作小组, the Ministry of Agriculture, and the Ministry of Finance on February 1, 2008, the OPOD reform aimed to make the villagers' voluntary labor and financial investments the basis of rural infrastructure construction and use government rewards and subsidies as a guiding mechanism to achieve this goal 以农民自愿出资出劳为基础, 以政府奖补资金为引导 (Comprehensive Rural Reform Working Group of the State Council, Ministry of Agriculture, and Ministry of Finance, 2008). More specifically, the new reform aimed at "linking financial awards with raising funds and labor by the villagers" 财政奖补与筹资筹劳挂钩 (Liu, 2017). In other words, the main goal was to encourage villagers' financial and labor investments in infrastructure by subsidizing a portion of the selected local projects. This system conceives of a bottom-up

process of nominating projects for subsidy awards. Each project must first be approved by more than half of villagers or over two-thirds of villager representatives, followed by approval of the township, county, and provincial governments, respectively, whereupon the central government makes a final decision. If a project is awarded, the central government covers about half of the project costs and expects the other half to be covered by the local governments and villagers through the raising of funds and investment of labor. In practice, the process does not work in a bottom-up fashion, so county governments (not villagers) often design projects, nominate them for awards, and lobby for the central government's approval (Zhan, 2013). Hence, the real significance of the new system lies not in its purportedly democratic character but in the central government's pursuit of continuing to share infrastructure costs with villagers. As previously noted, in the recent past local governments often converted compulsory labor services into fees because of rising rural outmigration and aging village populations. There is no reason to expect the reversal of this trend today. Hence, the main form of villager contribution is fundraising rather than labor mobilization. However, as shown below, some local administrations have carried out labor mobilization under the new system.

The initial results of the new scheme were promising. From 2008 to 2012, the proportion of villages that raised funds and labor in OPOD projects increased from 14 percent to 37.3 percent. The monetary equivalent of these collective investments increased from 10.299 billion yuan to 39.743 billion yuan. Per capita investment by villagers soared from 11.2 yuan to 41.7 yuan (Liu, 2017). Nevertheless, this early success brought complaints that the peasant burden was approaching a level reminiscent of the 1990s, resulting in the central government's fear of sociopolitical instability. At the National "One Case, One Discussion" Financial Awards and Compensation Work Meeting held in May 2013, Hu Jinglin, then vice-minister of finance, signaled a retreat from the rural mobilization policy:

We must strictly adhere to the bottom line that does not increase the burden on farmers, discuss the issue of fiscal awards and supplementary funds, and do not link them to farmers' fundraising and labor investment, and [we must] resolutely prevent raising the standard requirements for farmers' fundraising and labor investment without authorization, or increasing the burden of farmers in disguise in the name of voluntary contributions. (Liu, 2017)

Hence, it was decided that "financial awards should no longer be linked to raising funds and labor by the villagers" 财政奖补与筹资筹劳不再挂钩. By disabling local governments from using financial subsidies as a tool to

mobilize villagers' labor and financial resources, this policy shift has ruled out a revival of collective rural mobilization. Echoing the complaints about the negative effects of the 2006 reform on rural development, various government bodies have criticized overreliance on government finances and diminishment of villagers' contributions. For example, the Department of Agriculture of Shaanxi province reported that it could fund only two or three projects per township (at 100,000 yuan per project). Even the local governments of wealthier provinces raised similar concerns. For instance, the Jiangsu Provincial Agricultural Committee reported that in (relatively poor) northern parts of the province in particular, some essential projects, including village electrification, had not yet begun because of insufficient funds. As in 2006–2008, the central government, responding to the claims of overdependence on government spending, has recently reemphasized the importance of villagers' labor and financial contributions to the construction of local infrastructure and its maintenance. For example, the General Office of the State Council issued the "Guiding Opinions on Innovating Rural Infrastructure Investment and Financing Systems and Mechanisms" 关于创新农村基础设施投融资体制机制的指导意见 in February 2017, encouraging farmers and rural collective economic organizations to "independently raise funds to carry out infrastructure development" (Liu, 2017). Since alleviating the peasant burden ultimately places more burden on public finance and harms agrarian development, the central government has vacillated between increasing and decreasing villagers' labor and financial contributions, as well as efforts to employ voluntary or compulsory methods used to obtain such contributions.

As the current trend is relatively favorable for the mobilization of the labor and financial resources of villagers, local governments and official media outlets promote such practices. For instance, residents of Peizhai village in Zhangcun township, Huixian city, Henan province, were reported to have constructed a canal to bring water from the Taihangshan Shimen Reservoir, located 100 kilometers away from the village and containing a storage capacity of 800,000 cubic meters as of 2013. Pei Chunliang, an entrepreneurial village party secretary, donated 60,000 yuan to the project, and all 153 households of the village donated money and worked on the project without compensation (Henan ribao, 2013; Xinhua wang, 2017). In recent years, Secretary Pei received several national-level awards and was elected as a representative of Henan province to several National People's Congress meetings (Baidu baike, n.d.; Xinhua wang, 2017). The administration of Fuqiang village in Baishishan township, Luohe city, Jilin province, decided to restore compulsory work in 2014 to repair irrigation ditches, roads, and bridges without

significant expenditure. Each household was assigned about five days of compulsory work per year (Zhao and Tian, 2015).

In another reported case, after severe drought and flooding in Ningxiang county (the largest grain-producing county of Hunan province) in 2013, local officials used OPOD funds to encourage villagers to raise money and labor for the desilting of river channels and ponds. Based on the principle of “villagers who have money raise money, and those who have physical strength contribute labor” 村民有钱出钱, 有力出力, Ningxiang villagers covered 500 million yuan of the total farmland conservancy investment of 600 million yuan. As a result, 4,674 ponds and 1,568 kilometers of river courses were cleared, 628,000 mu of field canal systems were improved, and the county’s water storage capacity increased by more than 100 million cubic meters in a year (Renmin ribao, 2014). Starting from 2013, villagers in Wangjiaqiao village in Shuitianba township, Zigui county, Yichang city, Hubei province, constructed twelve kilometers of farm tracks without receiving any money from the government (Renmin ribao, 2017). In 2017, villager groups of Houluxi and Houludong villages in Jinshan township, Wenchang city, Hainan province, were reported to have allocated 1,000 days of compulsory work for environmental sanitation and raised 600,000 yuan (through villager WeChat groups) to provide financial support for infrastructure construction (Yao and Chen, 2017). In 2019, the water conservancy cooperative of Xiaomajia village in Tingkou township, Qixia city, Shandong province expanded the storage capacity of the village reservoir from 5,000 to 15,000 cubic meters, which cost about 100,000 yuan. Having donated labor and money, the villagers covered about one-third (32,000 yuan) of the project’s cost (Hou, 2019).

However, these successful cases remain exceptions rather than the rule. Raising money and labor from the villagers continues to be a challenging task for local cadres across the country. Using village land to construct new infrastructure is also challenging because of the widespread presence of “nail households” 钉子户, who either refuse to hand over their land or demand substantial compensation packages (Chen, 2018: 159; He, 2020: 132–34). While the local administrations of advanced regions can raise funds and become eligible to receive a significant amount of OPOD awards and subsidies from the central government, the administrations in less developed regions often take bank loans to become eligible for receiving such funding, exacerbating the local government debt problem (He, 2020: 130–31). Hence, the OPOD reform of 2008 has failed to solve the rural governance problems, especially in less developed regions, rooted in the tax-sharing reform of 1994 and the abolition of the agricultural taxes, fees, and “two works” system in 2006 (Chen, 2014; Smith, 2010).

Conclusion

This article contributes to the study of the collectivist legacy in Chinese agriculture after 1978 by making five main arguments. First, it demonstrates that the dramatic increase in procurement prices might not have been possible without significant cuts in government spending on agricultural infrastructure in the 1980s. The robustness of the infrastructure construction inherited from the collective era allowed for such spending cuts. Second, following production organization from the collective era, village administrations and villager groups were heavily involved in farm organization at least until the 1980s. They organized key parts of the production process such as irrigation, procurement and application of fertilizers and pesticides, and mechanized operations like ploughing and harvesting.

Third, the collective-era legacy of labor mobilization was robust until the abolition of the “two works” system (combining “compulsory work” and “labor accumulation work”) in 2006. Villagers were compelled either to work in infrastructure projects between fifteen and thirty days per year or pay an extra fee to receive exemption from such work. Fourth, local self-financing was also strong until the abolition of the agricultural tax and compulsory rural work in 2006. Township and village governments collected a substantial amount of taxes and fees from the villagers and transferred the profits of collective rural industries to infrastructure works. These institutional legacies of labor and financial mobilization helped maintain and build upon the infrastructural gains of the Mao era. Therefore, contrary to the conventional wisdom that assumed complete decollectivization after 1978, this article demonstrates that Chinese agriculture retained a *semi-collective* character up until 2006.

Finally, although the 2006 reform was a historically significant retreat in terms of rural labor and resource mobilization, the Chinese government launched the OPOD system in 2008 to transfer half of selected project costs to local governments and villagers, the latter of whom were expected to continue raising funds and mobilizing labor in local infrastructure projects. Hence, the 2008 reform shows that the Chinese state still intends to maintain the collectivist legacy under a new (relatively liberal and pro-rural) political-economic context. Despite the initial achievements of the reform in raising funds and labor from villagers, the central government retreated from its initial ambitious mobilizational goals by declaring in 2013 that government subsidies were no longer linked to villagers’ contributions. Nevertheless, as the policy discussions about the 2006 and 2008 reforms (as well as the official media’s continuous promotion of local cases of labor and financial mobilization) testify, collective-era legacies are not entirely forgotten but continue

to inform Chinese agrarian policy, at least to a certain extent. This continuity between the pre-reform and reform periods should be taken more seriously in studies on Chinese agriculture and its comparison with other large and populous countries of the Global South.

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Notes

1. The use of chemical fertilizer increased rapidly during the transition period. Following the end of the US-led trade embargo against China in 1971, China purchased thirteen large-scale synthetic ammonia/urea complexes between 1973 and 1975. They began full operation after 1977 (Stone, 1993: 336–39). As a result, the application of chemical fertilizer more than doubled, from 58.902 kg/ha in 1978 to 120.635 kg/ha in 1984 (Wang, Halbrecht, and Johnson, 1996: 290).
2. The author’s calculations are based on State Statistical Bureau of the People’s Republic of China Department of Synthesizing Data and Statistics, 1990: 8, 12.
3. On the other hand, it is also true that some of the campaigns during the collective era created long-term negative legacies. As Zeng and Eisenman (2018: 258) show, the Anti-Rightist Campaign (1957–1958) and the subsequent Great Leap Forward both negatively affected educational attainment and economic productivity until at least the year 2000. However, Eisenman’s other works (Eisenman,

2018; Eisenman and Yang, 2018) confirm that the overall record of rural collectives was quite successful, especially in the 1970s.

4. For a notable account of the collective-era legacies in Chinese farming in the 1980s, see Croll, 1994.
5. These factors explain why the Maoist leadership, although probably aware of the short-run positive incentive effect of a high price policy, did not take this road because of its approach to rural economic development, prioritizing long-term gains over short-term ones and accumulation over consumption.
6. If we also consider the category of “other price subsidies,” the total price subsidies reach 262,917 billion yuan between 1981 and 1990 (State Statistical Bureau of the People’s Republic of China, 1991: 223), making the ratio of spending cuts for agricultural capital construction to total price subsidies 27.3 percent, which is still a high figure.
7. The share of defense spending in China’s national budget remained at around 15 percent between 1978 and 1982 and then declined rapidly, to 10 percent in 1985 and around 8.5 percent between 1986 and 1990 (Wang, 1996: 896). The budget deficit became unsustainable despite significant cuts in defense spending. Hence, without serious spending cuts in agricultural capital construction, the Chinese government might not have been able to maintain agricultural subsidies during the 1980s.
8. Some of the findings of this survey were presented in Sicular (1993).
9. Likewise, since constructed infrastructures have gestation periods and do not increase the total output in the year of their construction, no matter whether villagers worked in construction or not, the total monetary value of the collective income distributed among them was fixed. Allocation of work points for construction works only increased the number of total work points and automatically decreased the value of each work point. As collective members wished to increase their portion within a total collective income by earning more work points, using the work point system to remunerate construction work was an administrative method used to increase villagers’ participation in these projects (Gürel, 2019: 1030; Wakashiro, 1990: 491).
10. One mu is equal to one-sixth of an acre.
11. The author’s calculations are based on State Statistical Bureau of the People’s Republic of China (1983: 210).
12. The figures in Table 6 include multiple types of agricultural support provided by rural industries and therefore do not reflect their actual contribution to infrastructure. However, there is evidence that the share of capital construction expenditure within total agricultural expenditure was considerable. For instance, in 1987 alone, collective rural industries contributed 500 million yuan to irrigation works (Editorial Board of the Agricultural Yearbook of China, 1988: 88), equal to 11.87 percent of the central government expenditure for all types of agricultural capital construction.

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